

Purpose:

Produce excellent science in a safe, environmentally sound manner with the cooperation, support, and appropriate involvement of the Laboratory's many communities

Location:

Upton, New York (Long Island)

Funding for Fiscal Year 2019:

- \$599 million from the U.S. Department of Energy (DOE)
- \$82 million from other agencies

Science Initiatives:

- Nuclear Physics
- Energy: Materials, Chemistry, Biological Science
- Data Science and Quantum Information Science
- High Energy Physics
- Accelerator Science & Technology: Innovation, Applications
- Quantitative Plant Science

Management:

Brookhaven Lab is operated and managed for DOE's Office of Science by Brookhaven Science Associates, a limited-liability company founded by the Research Foundation for the State University of New York on behalf of Stony Brook University, the largest academic user of the Lab's facilities, and Battelle, a nonprofit applied science and technology organization.



Brookhaven Lab hosted more than 5,075 visiting facility users and guest researchers from around the world in fiscal year 2019..

About Brookhaven National Laboratory

Brookhaven National Laboratory offers world-class facilities and expertise to answer the most exciting, important questions in science—from the birth of our universe to the sustainable energy technologies of tomorrow. With seven Nobel Prize-winning discoveries and more than 70 years at the frontiers of scientific exploration, the Lab is a multidisciplinary research institution operated by Brookhaven Science Associates for the U.S. Department of Energy.

Key Facilities

Brookhaven Lab, which sits atop 5,320 acres in central Suffolk County, is home to world-class research facilities, including:



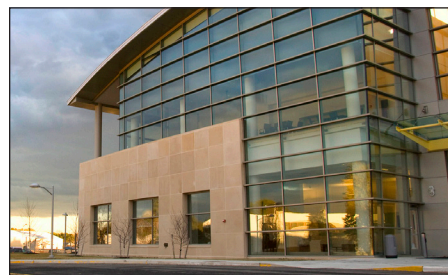
The Relativistic Heavy Ion Collider

More than 1,000 scientists from around the world use this particle accelerator, the only collider in the United States, to study subatomic building blocks and the ways they interact to learn more about the matter that makes up the mass of 98 percent of the visible universe—everything from stars to planets to people.



National Synchrotron Light Source II

The world's most advanced synchrotron light source was dedicated at Brookhaven Lab in February 2015. NSLS-II produces extremely bright beams of x-ray, ultraviolet, and infrared light for scientists exploring materials—including superconductors, catalysts, geological samples, and proteins—to accelerate advances in energy, environmental science, and medicine.



Center for Functional Nanomaterials

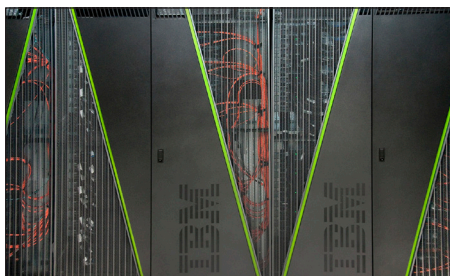
Scientists at the CFN are addressing energy challenges by creating materials and exploring their unique structure and properties at the nanoscale—where dimensions are measured in billionths of a meter, the scale at which many electrical and chemical interactions occur.



Solar Energy Arrays and Research Center

The 32-megawatt Long Island Solar Farm on the Lab site produces enough renewable energy to power 4,500 homes on the local electric grid. It is a testing ground for studies of efficiency, stability, grid integration, and the variability caused by changing weather conditions. At the smaller Northeast Solar Energy Research Center, researchers from Brookhaven and other national labs, academia, and industry study and test new technologies, working to make solar “power plants” more efficient and economical.

Learn about the Lab's discoveries and more (over)



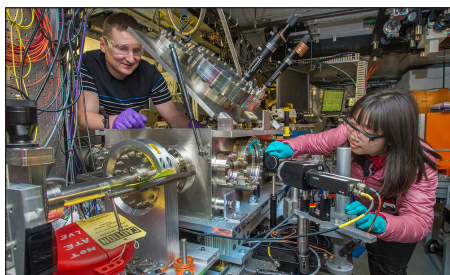
Computational Science Center

Lab researchers team with applied mathematicians and computer scientists to address “big data” questions in nuclear and particle physics, biology, nanoscience, sustainable energy, environmental science, and homeland security.



NASA Space Radiation Laboratory

Researchers here are working to understand and reduce the risks astronauts will face on future long-term space missions to Mars and beyond. The National Aeronautic and Space Administration (NASA) and the DOE Office of Science partnered to build this unique facility.



Accelerator Test Facility

The nation’s proving ground for future accelerators, this facility is designed to explore new methods of accelerating particles to higher energies and producing ever-brighter x-ray beams.

Significant Discoveries

- Seven Nobel Prize-winning discoveries, including the 2002 prize for physics, and 2003 and 2009 prizes for chemistry
- Evidence that matter in the early universe existed as a “perfect” liquid of subatomic quarks and gluons
- Advances in understanding high-temperature superconductors
- Technetium-99m, used to diagnose heart disease and other ailments for more than 40 million people annually
- L-dopa treatment for Parkinson’s disease
- Magnetically levitated (maglev) trains

Economic and Educational Impact

Brookhaven Lab is the only national lab located in the Northeast and one of New York State’s largest scientific research institutions. The Lab strengthens Long Island’s position as a center of innovation in sustainable energy, biotech, and other fields crucial to the growth of New York State’s economy. With more than 2,500 employees, 5,075 visiting facility users and guest researchers, and a fiscal year 2019 budget of \$681 million, the Lab has a significant economic impact on New York State. In 2019, Lab employee salaries, wages, and fringe benefits accounted for approximately \$384 million, or 56 percent of its total budget. Supporting local and state businesses whenever possible, the Lab spent more than \$108 million in 2019 on goods and services in New York State alone, \$87 million of that with Long Island companies.

Brookhaven Lab inspires future scientists and researchers, hosting more than 30,000 participants in grades one to 12 for programs each year through the Lab’s Office of Educational Programs (OEP). Students learn about scientific research and get hands-on experience through workshops, the annual science fair, contests, other programs and events, and visits to the on-site Science Learning Center. Additionally, OEP hosts more than 350 students and professors from universities across the country to participate in Lab research internships, tours, and workshops.